# 4 Ports
# USB KVM Switch

# User's Manual

**Version 2. 1  3/30/2005**

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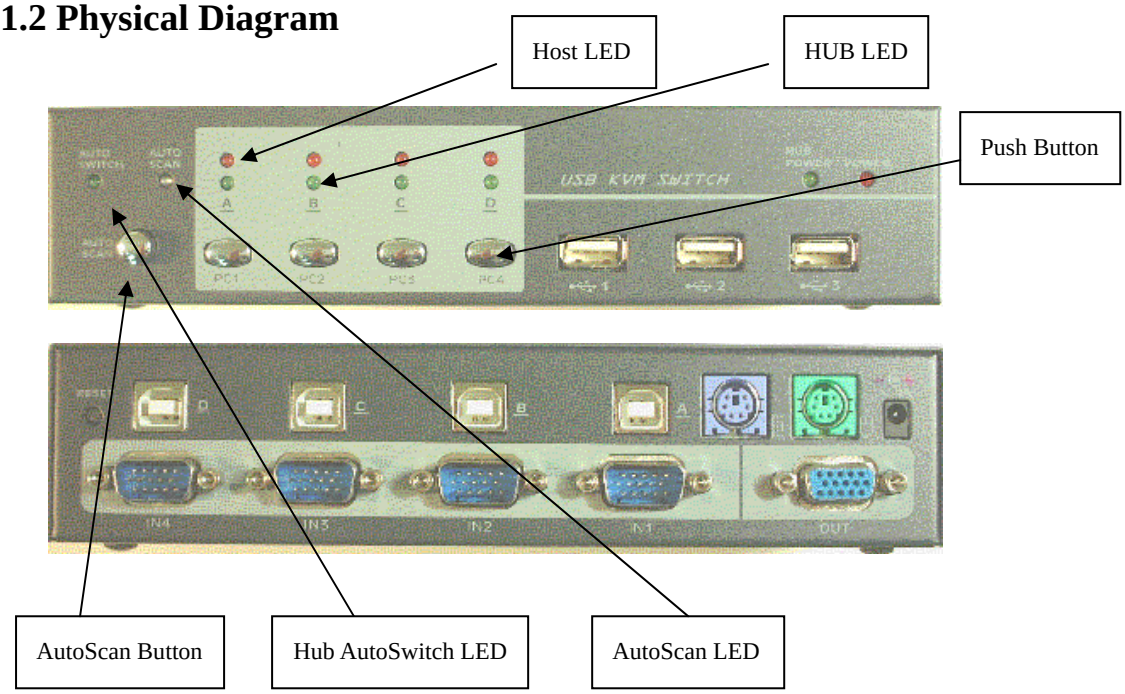
# 1. Introduction

Thank you on purchasing of ***USB KVM Switch***! You now have a high quality and durability system that can give you the control over multiple computers/servers from one console (PS/2 Mouse, Keyboard and Monitor).

## 1.1 Features

1. Controls 4 computers from a single console (Keyboard/Mouse) over USB connection using standard USB cables.
2. Supports PS/2 and USB Keyboard/Mouse (Hot-Key function supports only on PS/2 Keyboard).
3. Fully compliant with the USB 1.1 specification.
4. Supports Windows, Linux, Mac OS9/OSX, SunMicro Solaris 8 (For Sun Micro users, the external power adaptor is necessary when using the KVM Switch).
5. Supports 3 USB downstream ports.
6. 4 computers can share 3 USB Downstream ports.
7. Supports 3 types of switching: hardware push button, Hot-Keys on PS/2 keyboard, and On-Screen-Display (OSD) utility software (for Windows only).
8. OSD and LED display for easy status monitoring.
9. OSD utility indicates:
    1. Power status of connected computer(s).
    2. Active host computer.
10. Provide HUB switching in independent method or combination with the host switching( AutoSwitch mode ).
11. Auto-Scan function (Time interval can be adjusted between 5-20 seconds when the Auto-Scan function is enable).
12. Supports VGA resolutions up to 2048x1536 @ 85HZ.
13. Plug and Play (Windows 98/SE users might need your Windows CD to install the HID driver for USB Keyboard/Mouse).

## 1.2 Physical Diagram




## 1.3Package Contents

The product you purchased should contain the equipment and accessories shown as follows:

1. A ***USB KVM Switch***.
2. CD with users manual, On-Screen-Display(OSD) utility.
3. Four sets of USB+VGA cables.

# 2. Specifications

## 2.1 General

| Specification | |
|---|---|
| Operating Temperature | 5~ 40˚C |
| Humidity | 0%~80%RH |
| Cables Included | 4 |
| Cable Length | 1.8M |
| Dimensions (LxWxH) | 200 x 82 x 44mm |
| Unit Weight | 721g |
| Number Of Computer Controlled | 4 |
| PS/2 Keyboard & Mouse Support | Yes |
| Keyboard Hot-Key Switching Supported | Yes (By PS/2 Keyboard only) |
| USB Downstream ports | 3 |
| Compliant with USB Version | USB1.0 / USB1.1 |
| Compliant with HID Version | USB HID 1.1 |
| Over-Current protection design for USB Downstream ports | Yes |
| Power | By Host or External Adaptor (Optional) |
| Basic Power Consumption | DC 5V |
| Bus-Power limit current protection | 500mA (When external adaptor applied) |
| Output Voltage | 5V |
| Output Current | 2A |
| OSD (On Screen Display) | Yes (Application Program, Windows only) |
| DDC, DDC2 monitor | Yes (Max. Resolution: 2048x1536) |
| Hot Pluggable | Yes (USB & PS/2) |
| Auto-Scan function | Yes (5 ~20 seconds) |
| Support Sun Micro Serious | Yes |
| Support Mac Serous | Yes |
| Support Linux Serious | Yes |
| Device driver | No |

## 2.2 LED Indicators

- **Power status LED indicator:**
  **On (Green):** The power is connected and the device is ready to work.
  **Off:** No power is connected.

- **USB Downstream Ports LED Indicator:**
  **ON (Green):** USB ports are ready to work.
  **Off:** USB ports are in over-current condition or are not ready to work.

  Note:
  If over-current situation happens for certain USB downstream ports, the corresponding USB indicator will turn **OFF** to indicate that these ports is not working now. When over-current situation is solved, the USB indicator will turn **ON** again.

- **Auto-Switch LED Indicator:**
  **ON:** Auto Switch mode is on.
  **Off(Green):** Auto Switch mode is off.

- **Auto-Scan LED Indicator:**
  **Off:** Auto Scan mode is off.
  **ON (Green):** Auto Scan mode is on.

- **PC Host LED Indicator (Red):**
  **ON:** Indicates which Host PC is selected.

- **HUB LED Indicator (Green):**
  **ON:** Indicates which Host connect with the three USB downstream HUB ports.

# 3. Install USB KVM Switch

### 3.1 System Requirements

A PC with 1 spare USB port and 1 VGA port.
Windows 98 or later, Mac OS9/OSX, Solaris 8 (SUN BLADE 100), Linux Kernel 2.3 or later.

### 3.2 Hardware Installation

Make sure that the USB port of your computer is enabled and working properly.
Connect the USB cable Type-A end to the USB port of your computer, and the USB cable Type-B end to the any available upstream on ***USB KVM Switch***.
Connect the VGA male-to-female cable between the video port of your computer and video port that corresponds to the USB port you selected in step 2.
Repeat steps 1-3 for any other computers you are connecting up and up to 4 computers can be connected at the same time.
Plug the power adaptor cable into the ***USB KVM Switch*** .

## 3.3 Notice for Sun Micro System user

Since some Sun Micro system will detect the monitor information, if system fail to get information from the Monitor, then you won't get any screen came out. So for safety, "YOU MUST SWITCH USB KVM SWITCH TO THE SUN MICRO SYSTEM" before you power on the Sun Micro System. After you seeing the screen from the Sun Micro System, then you can switch to any other Host. If you have multiple Sun Micro systems, then you have to repeat this procedure one by one.

### 3.4 Powering up USB KVM Switch

***USB KVM Switch*** supports USB plug & play technology. All the components can be added and removed at any time without the need to shut the unit down.

### 3.5 Driver Installation (Windows 98/SE only)

After you connect ***USB KVM Switch*** to your PC, Win 98 will automatically detect the device and prompt for the driver installation. Please install ***USB KVM Switch*** by following the instruction from **Step A-E**. Please have your Windows 98 CD ready.

Add New Hardware Wizard
This wizard searches for new drivers for:
USB Human Interface Device
A device driver is a software program that makes a hardware device work.
< Back
Next >
Cancel

Fig. A

A. Press "Next" to Continue. (Ref. Fig. A)

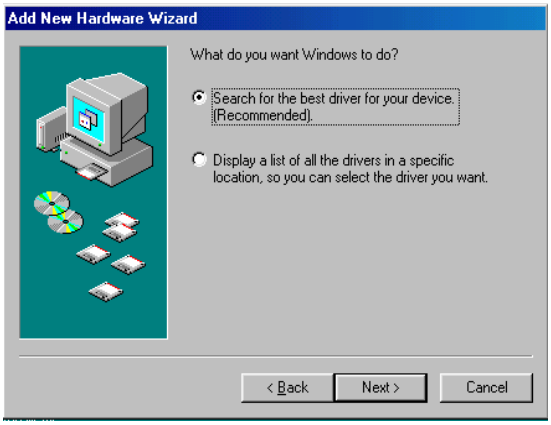

Add New Hardware Wizard
What do you want Windows to do?
Search for the best driver for your device. (Recommended).
Display a list of all the drivers in a specific location, so you can select the driver you want.
< Back
Next >
Cancel

Fig. B

B. Tick "Search for the best driver for your device" and press "Next" to continue. (Ref. Fig. B).

Add New Hardware Wizard
Windows will search for new drivers in its driver database on your hard drive, and in any of the following selected locations. Click Next to start the search.
Floppy disk drives
CD-ROM drive
Microsoft Windows Update
Specify a location:
A:\
Browse...
< Back
Next >
Cancel

Fig. C

C. Please insert the "Windows 98" CD into your CD-ROM drive. Tick "CD-Rom drive" and press "Next" to continue. (Ref. Fig. C)

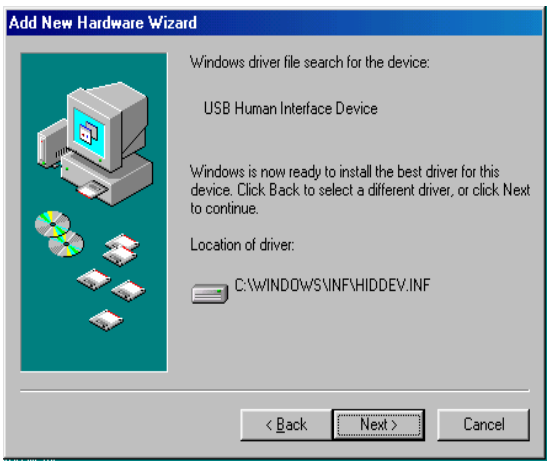

Add New Hardware Wizard
Windows driver file search for the device:
USB Human Interface Device
Windows is now ready to install the best driver for this device. Click Back to select a different driver, or click Next to continue.
Location of driver:
C:\WINDOWS\INF\HIDDEV.INF
< Back
Next >
Cancel

Fig. D

D. Press "Next" to start the installation process.
(Ref. Fig. D)

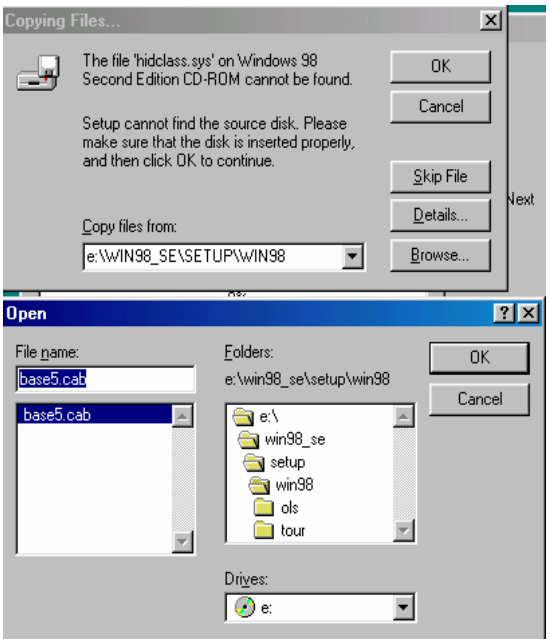
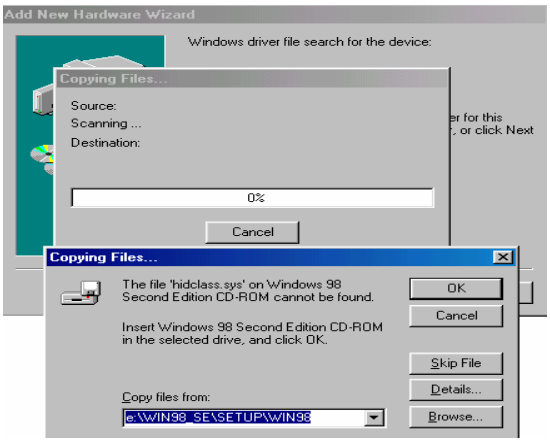



Fig. D1

D1. Sometimes Windows cannot locate the necessary driver automatically. So you need to choose "Browse" to specify the location of the driver on your "Windows 98" CD manually. *
(Ref. Fig. D1)

* The driver might be located in a different directory from the figure above.




D2. Press "OK" to continue (Ref. Fig. D2)

Fig. D2

Add New Hardware Wizard
USB Human Interface Device
Windows has finished installing the software that your new hardware device requires.
< Back
Finish
Cancel

E. Press "Finish" and Windows has finished installing the USB Human Interface Device driver for PS/2 keyboard & mouse. (Ref. Fig. E)

Fig. E

## 3.6 Using the OSD program

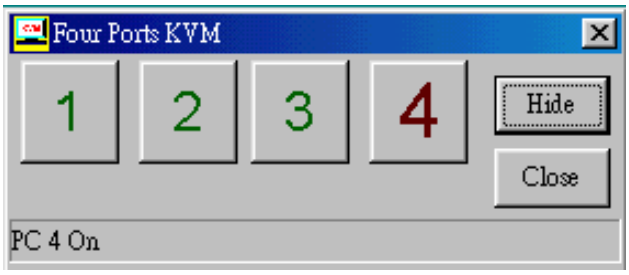



Fig. F

**There are four different statuses:**

a. "No PCs Found" means that ***USB KVM Switch*** cannot acquire the PC status. This is either the PC did not connect or is powered off. (Ref. Fig. G)

Fig. G

The "Large RED colour 4" and "Small GREEN colour 2" means that 2 PCs are connected to Port 1 and Port 4 of your ***USB KVM Switch*** respectively, and you have switched to Port 4 already. So the OSD program displayed a "PC 4 On" underneath. You can click "Small GREEN colour 2" to switch to this available host. (Ref. Fig. H)

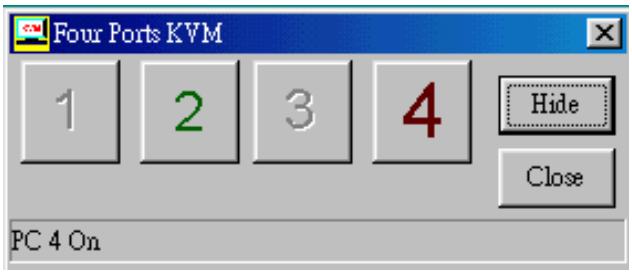



Fig. H

The "Large RED colour 4" and "Small GREEN colour 1, 2, 3" means that four PCs are connected to Port 1 and Port 4 of your ***USB KVM Switch*** respectively, and you have switched to Port 4 already. So the OSD program displayed a "PC 4 On" underneath. You can click Small GREEN colour 1, 2 or 3" to switch to a certain available host. (Ref. Fig. I)

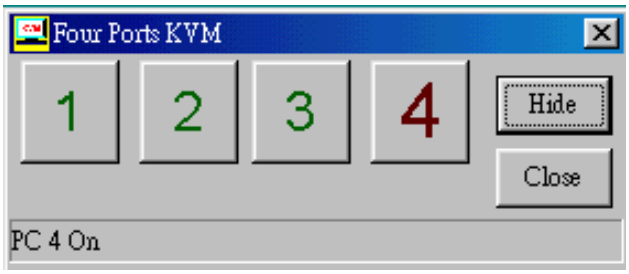



Fig. I

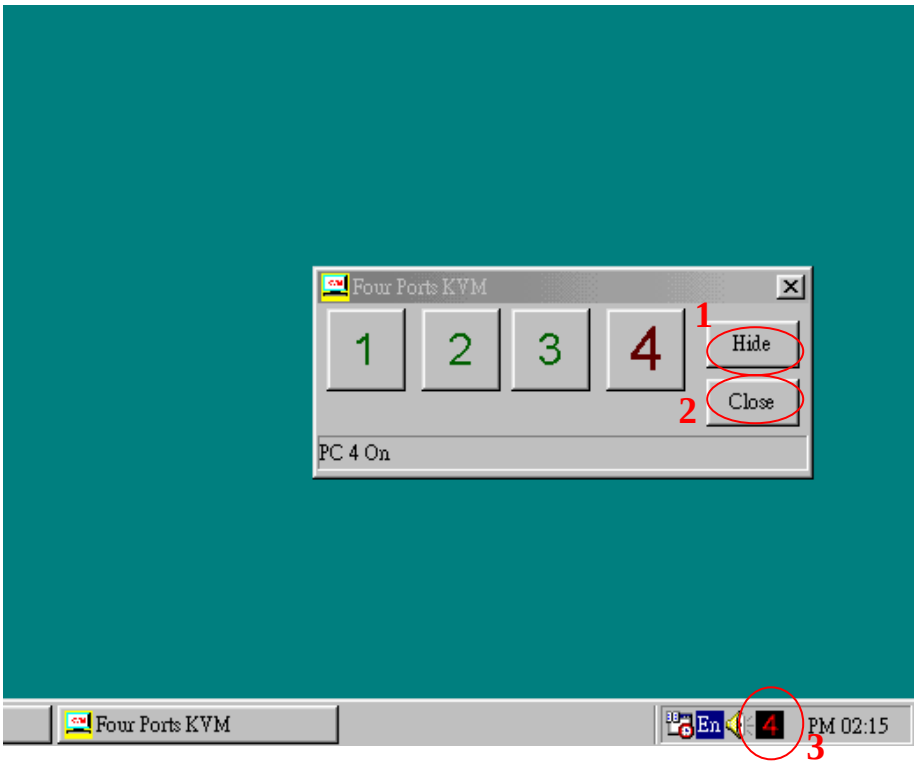



Fig. J

1. When user click "Hide" button, OSD program window will hide in Taskbar.
2. When user click "Close" button, OSD program will exit.
3. If OSD program hide in Taskbar, user can use mouse right button to show or exit program.

# 4. Switching the *USB KVM Switch*

***USB KVM Switch*** supports 3 methods to switch between computers: **Push button**, **Hot Keys** and **OSD**. Due to refresh of the video and re-synchronization of the mouse and keyboard signal, it will take 1-3 seconds configure time after each switching. This is the normal operation that ensures the proper synchronization is established.

Note:
The drivers for most USB devices (Mass Storage device, CCD Cameras, Scanners, Card Reader, Printers, e.g.) are required to be shut down or follow the "**Safely Remove**" command provided in Windows before you disconnect the device, or else the system might be hanged. When you switch computers with the Port Selection Switch, it is the equivalent of disconnecting the device. Therefore, if you have peripheral devices (other than a second keyboard and mouse) connected to these ports, you must be sure to shut down or safely remove the USB driver for them before switching computers.

**1. Manual Switch by pushbutton:**

You can switch to any other available active USB host connection by simply push the appropriate switch button on **USB KVM Switch**. The LED will be lit to indicate which port is currently selected.

**2. Two Steps Hot Key Switch by keyboard:**

You can switch to any available active USB host connection by using the three steps Hot Key directly, instead of manually select by pushbutton. To send commands to **USB KVM Switch**,

must be pressed twice ( Step1 ). Then you can press [1] to [4] (Step 2) to switch between ports. **(Support PS/2 Keyboard only)**

***After invoking the Hot Key function with the** **you must key in the corresponding active key (Step 2) within 3 seconds for each key press.**

**(** *The Scroll LED will start blinking and wait for the Step 2 hotkey, after pressing any key or over 3 seconds, the keyboard LED will back to the original status.)*

**Three Steps Hot Key definition table**

| Step 1 | Step2 | Action |
|---|---|---|
| Scroll Scroll | H | **USB HUB Auto-Switch mode** |
| Scroll Scroll | ! 1 | **Switches access to the computer which connecting to host1** |
| Scroll Scroll | @ 2 | **Switches access to the computer which connecting to host2** |
| Scroll Scroll | # 3 | **Switches access to the computer which connecting to host3** |
| Scroll Scroll | $ 4 | **Switches access to the computer which connecting to host4** |
| Scroll Scroll | Q | **Switch the HUB to host 1** |
| Scroll Scroll | W | **Switch the HUB to host 2** |
| Scroll Scroll | E | **Switch the HUB to host 3** |
| Scroll Scroll | R | **Switch the HUB to host 4** |
| **No Scroll Key Need** | * ! 1 | **AutoScan time interval is 5 seconds (Available only when Auto-Scan function is ON)** |
| | * @ 2 | **AutoScan time interval is 10 seconds (Available only when Auto-Scan function is ON)** |
| | * # 3 | **AutoScan time interval is 15 seconds (Available only when Auto-Scan function is ON)** |
| | * $ 4 | **AutoScan time interval is 20 seconds (Available only when Auto-Scan function is ON)** |

*** Notice : To adjust the interval time for AutoScan, you do not need to press the SCROLL key, and this can be used only by normal number key.**

**3. On-Screen-Display (OSD) Switch (Windows only):**

You may also use the OSD utility software from the enclosed CD to switch between computers.

## * Auto-Switch Function:

**When Auto-Switch mode is ON:**

When you enable the AutoSwitch mode will cause the ***USB KVM Switch*** to switch the HUB with the host together when you switch the host, that means host and HUB will switch together, it could be by hotkey, push button. This is convenient for you to let the USB device always follow the host.

There are two ways to turn the HUB Auto-Switch mode ON :
A). By hot key [Scroll+Scroll][H] : please be reference the hotkey table in page 14.
B). Press any host push button continually for 2 seconds when the Auto-Switch mode is OFF. ( The Auto-Switch LED will be ON ).

**When Auto-Switch mode is OFF:**

You must switch the hub to the new target host by hotkey.

There are two ways to turn the HUB Auto-Switch mode OFF :
A). By hot key [Scroll+Scroll][H] : please reference the hotkey table in page 14.
B). Press any host push button continually for 2 seconds when the Auto-Switch mode in ON. ( The AutoSwitch LED will be OFF)..

## * Auto-Scan Function:

When you press the Auto-Scan button, USB KVM Switch switches cycles through all the ports and displays them on the monitor. Each port is displayed for 5,10,15,20 seconds before switching to the next. You can press the normal numeric key 1,2,3,4 to adjust the interval time(Please reference the hotkey table in page 14). If you press the Auto-Scan button again, the monitor screen will jump back to the port that it was started.

Note:
The mouse and keyboard will have no effect in this mode. This is necessary to prevent errors such as erratic movement and wrong characters to display when using the mouse or keyboard in accident.

**Auto-Scan Interval timer**

[n] *(Available only when Auto-Scan function is ON)

You can change the Auto-Scan interval by pressing the appropriate number key or the number pad keys.

| n | Scan Interval |
|---|---|
| [1] | 5 sec. |
| [2] | 10 sec. |
| [3] | 15 sec. |
| [4] | 20sec. |
| [5] | 25sec. |
| [6] | 30sec. |
| [7] | 35sec. |
| [8] | 40sec. |
| [9] | 45sec. |
| [0] | 50sec. |

## * Sun Micro System Function Key Emulation:

There are 16 special functions on the Sun Micro system keyboard, the USB KVM Switch can emulate these function keys via the PS/2 keyboard ( it won't work on the USB keyboard ). Here is the mapping table for these function operation. To active these emulation on the PS/2 keyboard, you have to press the LEFT Window KEY first ( this key usually is located between the left [Ctrl] and left [Alt]), then choice the second relative key.

| Sun Micro System Function Key | PS/2 Keyboard |
|---|---|
| Stop | L_Win & L_Alt |
| Props | L_Win & L_Ctrl |
| Compose | L_Win & L_Shift |
| Front | L_Win & F1 |
| Open | L_Win & F2 |
| Find | L_Win & F3 |
| Again | L_Win & F4 |
| Undo | L_Win & F5 |
| Copy | L_Win & F6 |
| Paste | L_Win & F7 |
| Cut | L_Win & F8 |
| Help | L_Win & F11 |
| Power | L_Win & F12 |
| Mute | L_Win & 1 |
| Volume Down | L_Win & 2 |
| Volume UP | L_Win & 3 |

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This device generates and uses radio frequency and may cause interference to radio and television reception if not installed and used properly. This has been tested and found to comply with the limits of a Class B computing device in accordance with the specifications in Part 15 of the FCC Rules. These specifications are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by plugging the device in and out, the user can try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the device and receiver.
- Connect the computer into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.